

Na⁺/K⁺ ATPase β3 (Extracellular)

Mouse Monoclonal IgG2a

Cat. # NM0251

Size 100 μl

Background

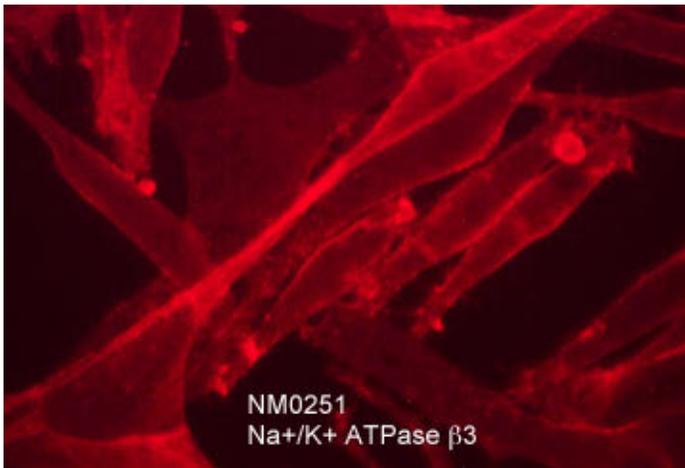
The Na⁺/K⁺ ATPase is an integral membrane heterodimer belonging to the P-type ATPase family. This ion channel uses the energy derived from ATP hydrolysis to maintain membrane potential by driving Na⁺ export and K⁺ import across the plasma membrane. It is composed of a large catalytic α subunit and a membrane-spanning auxiliary β subunit. In humans, the Na⁺/K⁺ ATPase is a binary complex of an α subunit that has four isoforms (α1-α4) and a β-subunit that has three isoforms (β1, β2, β3). Na⁺/K⁺ ATPase subunit expression has been shown to be upregulated in cancers, and inhibition of Na⁺/K⁺ ATPase activity has anti-cancer effects. The β3 subunit of Na⁺/K⁺ ATPase has increased expression in human gastric cancer tissues and cell lines, and its increased expression level predicts poor patient outcome. β3 subunit knockdown significantly inhibited cell proliferation, colony-formation ability, migration, and invasion in human gastric carcinoma cell lines.

Background References

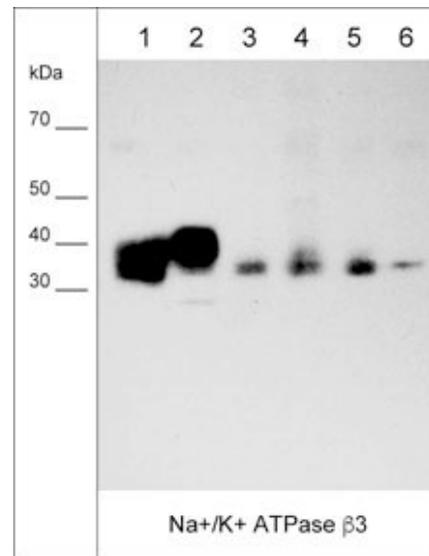
Yoshimura, SH et al. (2008) *J Cell Sci.* 121:2159.

Clausen, MV et al. (2017) *Front Physiol.* 8:371.

Li, L et al. (2017) *Oncotarget.* 8(48):84285.



Immunocytochemical labeling of Na⁺/K⁺ ATPase β3 in paraformaldehyde fixed human MeWo melanoma cells. The cells were labeled with mouse monoclonal anti-Na⁺/K⁺ ATPase β3 (clone M025). The antibody was detected using goat anti-mouse Ig DyLight® 594.



Western blot of native human MDA-MB-231 (lane 1), and MeWo (lane 2) cell lysates, as well as native human breast (lane 3), lung (lane 4), skin (lane 5), and brain (lane 6) tissues. The blot was probed with anti-Na⁺/K⁺ ATPase β3 (NM0251) at 1:1000.

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Immunogen

Clone (M025) was generated from a proprietary antigen related to the native human Na⁺/K⁺ ATPase β 3 subunit expressed in MeWo melanoma cell line.

Buffer and Storage

Mouse monoclonal antibody purified with protein G chromatography is supplied in 100 μ l phosphate-buffered saline, 50% glycerol, 1 mg/ml BSA, and 0.05% sodium azide. Store at -20°C. Stable for 1 year.

Applications

WB	1:1000
ELISA	1:2000
IP	1:100
ICC	1:100

Species Reactivity

Hu

End user should determine optimal dilution for their particular applications and experiments.

Western blot membranes were incubated with diluted antibody in 5% non-fat milk, Tris buffer, 0.04% Tween20 for 1 hour at room temperature.

Abbreviations: E = ELISA, ICC = immunocytochemistry, IHC = immunohistochemistry, IP = immunoprecipitation, MS = mass spectrometry, WB = western blot
Hu = Human, Ms = Mouse, Rt = Rat, Ck = Chicken, F = Frog, B = Bovine

Specificity

Clone M025 mouse monoclonal antibody detects a 40 kDa* protein on SDS-PAGE "Native" immunoblots of human A431, LNCaP, MeWo, MDA-MB-231, and MCF7 cells. This antibody does not detect denatured Na⁺/K⁺ ATPase β 3 subunit. The antibody works for western blot, immunoprecipitation, ELISA, and immunocytochemistry, as well as detects the β 3 subunit on live cells.

*All molecular weights (MW) are confirmed by comparison to MW standards and to western blot mobilities of known proteins with similar MW.

"Native" western blot utilizes non-reducing sample buffer (no mercaptoethanol or SDS), normal SDS-PAGE gel electrophoresis, and no methanol in transfer buffers.

Related Products

NM0161 Na⁺/K⁺ ATPase β 3 (Extracellular) Mouse Monoclonal

NM0201 Na⁺/K⁺ ATPase β 3 Mouse Monoclonal

CM0011 CD98 (Extracellular region) Mouse Monoclonal

CM0071 CD44 (Extracellular region) Mouse Monoclonal

CK7700 Cell Structure Labeling Immunocytochemistry Kit

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